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EXAMINER	
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Applicant argues that none of the cited references teach or suggest a xylanase of GH family 10, endoglucanses of GH family, and the particular amounts of enzymes in %w/w of the total as required by the claims, and none of the references in combination or alone suggest the methods and compositions of Applicants claims.

However, Laroye teaches a process for production of a mash having enhanced filterability, preparing a mash in the presence of a mixture of enzyme activities, and filtering the mash to obtain a wort, the enzymes are, a xylanase (endo-xylanase activity), and β-glucanase activity (preferably 1,4-β-endoxylanase activity), and composition comprising a mixture of β-glucanase and endo-xylanase (pages 3 0009 continued, and 0013, 0015, and p. 0024), xylanase was obtained form *Aspergillus niger* (page 4 0028), endoglucanase or β-glucanase from *Bacillus amyloliquefaciens* (p.4 0027). Laroye also teaches a process of reducing the viscosity of an aqueous solution comprising a starch hydrolysate, said process comprising, testing at least one xylanolytic enzyme for its hydrolytic activity by hydrolysis of xylan from oat spelts (page 4 0028). Laroye teaches varying the compositions of the enzymes mixture in order to determine the role of each component of the mixture with regards to yield and filtration improvement (p.6 0036). Laroye teaches β-glucanase having an activity of 600 BGR/g (p.4 0027). Laroye also teaches an enzyme mixture comprising 60 BGR/kg malt (equivalent of 0.1 g or 100 mg of enzyme per kg of malt, calculated using the given enzyme activity) and 750 LYX/kg malt (p.7 0042). It must be noted that LYX is the unit of xylanase activity (see page 4 0028). Thus a person of ordinary skill at the time the

invention was made would have been able to calculate the amount of enzyme (in % w/w) needed to be added to the mash using the enzyme activities.

Laroye does not teach the amount of enzymes in % w/w, a xylanase of glucoside hydrolase (GH) family 10, and endoglucanase enzyme protein of GH family selected from the group consisting of GH5, GH7 and GH12. However, Bedford et al. teach a viscosity reducing composition (mixture of enzyme proteins for reducing the viscosity of the animal feed) comprising 0-20% by weight of an endoglucanase of GH family, depending on the content of cellulose (Abstract and column 3 lines 28-30), and the composition further comprises a xylanase (claim 21). Bedford et al. also teach an endoglucanase (SEQ ID No. 18) from *Trichoderma reesei* and *Trichoderma viride* (column 3 lines) with β-glucanase activity (column 19 lines 5-8). Bedford et al. further teach by genetic manipulation of host microorganism such as fungus *Trichoderma*, desired enzymes in the appropriate relative amounts can be produced (column 10 lines 35-45). Bedford et al. also teach a method (formula) for calculating the β-glucanase activity of the enzyme (column 18 line 55).

Further motivation to use a xylanase of glucoside (GH) family 10 is in Kofod et al. who teach a xylanase derived form *Aspergillus aculeatus* (SEQ ID No.9), a xylanase of glucoside (GH) family 10 (with endo-xylanase activity) (column 16 lines 64-65). Kofod et al. further teach the xylanase, in addition to xylanase activity, exhibits α-arabinio-pyranosidase activity (column 5 lines 14-15). Kofod et al. also teach surprisingly it has been found that the xylanase II of the present invention may be used to improve the filterability of wort (column 8 lines 64-65). Kofod et al. also teach xylanase activity (FXU

or xylanase units/g), 7.5 FXU corresponds to 0.19 mg enzyme protein (column 21 lines 37-38). Therefore, since at the time the invention was made the enzymatic activity of the xylanase was known in the art, a person of ordinary skill in the art at the time the invention was made would have been capable of calculating the amount of enzyme to be added using the enzyme activity and based on the amount of substrate in the mash.

Therefore, in view of the above teachings, a person of ordinary skill in the art at the time the invention was made could have been motivated to substitute the endo-xylanase and endoglucanase enzymes in the composition and method as taught by Laroye with the endo-xylanase of Kofod et al. and/or endoglucanase as taught by Bedford et al. in order to provide a composition and a process for production of a mash having enhanced filterability with the predictable result of hydrolysing the β-glucans in the mash, reducing the viscosity, and less clogging of filters. The claim method and composition would have been obvious because a person of ordinary skill in the art at the time the invention was made could have been motivated to use known enzymes or enzyme preparations which were taught in the prior art for their effects on reducing viscosity in a known mashing process, and the results would have been predictable to one of ordinary skill in the art.

/Leon B Lankford/

Primary Examiner, Art Unit 1651